

CLAIMS:

1. A dispenser for dispensing flowable product from a container (1,101,201,301), having a structure comprising:

5 (a) a tube (3), with a resiliently deformable wall (32,132,232,332,432,532), defining a discharge flow channel (31) for the flowable product, between an inlet and an outlet end; and

(b) means (5,7,8,9,9',405) for providing lateral  
10 deformation of the deformable wall (32,132,232,332,432,532) of the tube (3) to compress the discharge channel (31) so that in use flowable product in the tube is expelled from the outlet end (36,136,336,436,5381).

15 2. A dispenser according to claim 1, in which the means (b) (5,7,8,9,9',405) comprises a movable actuator element, engageable with the tube, which also provides the lateral deformation means for expelling flowable product from the outlet end (36,136,336,436,5381).

20 3. A dispenser according to claim 2, which comprises a static reaction abutment (26,126,226,326), or an additional opposed actuator element (5,7), to support the tube from the opposite side to the actuator element.

4. A dispenser according to claim 1,2 or 3, in which the dispenser has an inlet valve function at an upstream position, operable to wholly or partially prevent flow back out of the inlet end whilst the discharge channel  
5 (31) is compressed.

5. A dispenser according to claim 4, in which a movable displacement element (53,253,83,93,93') is provided, operable to displace a portion of the deformable wall of  
10 the tube (3) to wholly or partially block it, providing the inlet valve function.

6. A dispenser according to claim 2 or 3, in which the actuator element (5,7,8,9,9',405) is movable in a  
15 dispensing stroke laterally relative to the tube (3), and includes a blocking portion (53,253,83,93,93') to displace a portion of the deformable wall at an upstream position to wholly or partially block the tube(3) there, and a compression portion (55,255,85,95,95') extending  
20 downstream relative to the blocking portion, providing the lateral deformation means for expelling flowable product from the outlet end (36,136,336,436,5381), wherein the blocking portion (53,253,83,93,93') being movable laterally in advance of the compression portion  
25 (55,255,85,95,95').

7. A dispenser according to claim 6, in which the blocking portion (53,253,83,93,93') is a longitudinally-localised lateral projection on the actuator element.

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8. A dispenser according to claim 6 or 7, in which the blocking portion (53,253,83,93,93') is resiliently retractable relative to the compression portion.

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9. A dispenser according to any one of claims 2 to 8, in which the actuator element (5,7,8,9,9',405) is mounted pivotally (52,215,82,92,92') in the dispenser.

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10. A dispenser according to any one of claims 2 to 9, in which the actuator element (5,7,8,9,9') is exposed for direct manual engagement, or is connected via an operating mechanism to a discrete element for manual engagement.

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11. A dispenser according to any one of the preceding claims, in which a discharge valve (33,333,433,539) is provided at a discharge opening (36,136,336,436,5381) at the outlet end of the tube (3).

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12. A dispenser according to claim 11, in which resilient deformability of the tube wall around the discharge opening acts as the discharge valve (33,333,433,539) .

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13. A dispenser according to claim 12, in which the discharge opening is a slit through the tube wall.

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14. A dispenser according to claim 13, in which the discharge valve is a duckbill valve (33,333,433) integral with the deformable wall.

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15. A dispenser according to any one of the preceding claims, in which the tube has a cylindrical or oblong cross section.

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16. A dispenser according to claim 15, in which the tube is provided by a one-piece elastomeric entity, or by a two-piece construction with one piece of rigid plastics (Y) and a second piece of elastomeric material (X) .

17. A dispenser according to any one of the preceding claims, having a closure component (6,206) for a container at its inlet end.

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18. A dispenser according to claim 17, in which the closure component (6,206) is a snap-fit or screw-fit cap.

19. A dispenser according to claim 18, in which the  
5 closure component fits in place of the screw cap of a toothpaste tube (201).

20. A dispenser package comprising a dispenser according to any one of the preceding claims, mounted on a  
10 container.

21. a dispenser package according to claim 20 in which the container is airless, or volume-adjusting, having a collapsible bag or follower piston (102,302).

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22. A toothpaste dispenser package according to claim 20 or 21.